

Motivation for Exercise and Health

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The Deep South Center for Occupational Health & Safety



The University of Alabama at Birmingham & Auburn University



- NIOSH funded Education and Research Center preparing master's and PhD students in occupational health and safety
 - UAB School of Nursing - occupational health nurses
 - UAB School of Public Health - industrial hygienists
 - Auburn University - safety and ergonomics specialists

Working Well Initiative

- In 1991 the School of Nursing began a partnership with the City of Birmingham to offer the Good Health Program
- Since 1997 the School of Nursing has also provided a nurse practitioner-managed workers' compensation clinic

Good Health Program

- Annual health screen and health risk appraisal
 - During scheduled work hours or they may have the information sent in by their private physician.
 - Height, weight, waist circumference, cholesterol, blood pressure, blood glucose, HgbA1c and vision

I  Good Health

- Firefighters have annual hearing and pulmonary function screening
- Firefighters and police also have annual physical fitness testing (Fit√Check) composed of strength, aerobic capacity, and flexibility measures.

- An annual six week Back School for back-injured employees; additional training courses on back safety are offered to targeted departments.
- Exercise classes (yoga, aerobics, and general exercise) are offered throughout the year at the City Fitness Center to employees and their spouses.
- Personal trainers at the fitness center
- Noon talks

- Monthly tip sheets & posters
- Payroll stub announcements
- Counseling services of a registered dietitian
- Counseling and case management services of a nurse practitioner
- Active+
- Eat Smart
- EAP services

Good Health Program

- C. Everett Koop National Worksite Health Award
- International Benchmarking Best Practice Award
- Wellness Councils of America (WELCOA) Gold Award

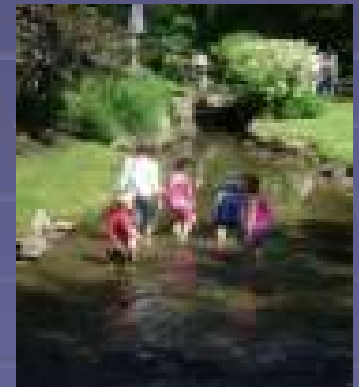
\$10 saving for every \$1 spent

- When actual costs were compared to forecasted costs, the City of Birmingham had saved millions of dollars over a five year period. As of 2004, medical insurance costs remain stable at 41.3% of the benefits budget as compared to 40.2% of the budget in 1985 and 12.6% of the payroll compared to 11.6% of the payroll in 1985.

- Probstfield (2003) found that smoking cessation can save an annual \$1,300-\$3,900 per person.
- Medical costs associated with excess risk, generally in the form of modifiable behaviors account for 25-30 percent of annual healthcare expenditures (Wright et al, 2004)

- The wellness program at GlaxoSmithKline educated 6,049 employees regarding the areas of tobacco use, nutrition, activity, stress management and depression, and preventive screening.
- On average, the company saved \$613 per participant annually in medical costs.

Motivating Exercise and Good Health



Leading causes of death:

- Heart disease: 685,089
- Cancer: 556,902
- Stroke (cerebrovascular diseases): 157,689
- Chronic lower respiratory diseases: 126,382
- Accidents (unintentional injuries): 109,277
- Diabetes: 74,219
- Influenza/Pneumonia: 65,163
- Alzheimer's disease: 63,457
- Kidney disease: 42,453
- Septicemia: 34,069

National Center for Health Statistics 2002-2003

Rationale for Worksite Health Promotion

- CDC (2004) reports that approximately 50% of U.S. adults have serum cholesterol levels > 200 and in 2002 reported that 18.3% of the U.S. adult population had cholesterol > 240 (CDC, 2003).
- Nearly one in 3 adults (31.3%) of the U.S. adult population or 65 million adults have hypertension resulting in estimated direct and indirect costs for 2005 of \$59.7 billion (American Heart Association, 2005; Fields et al, 2004).

- Data from the Joint National Committee on Prevention, Detection, Evaluation, and Treatment of High Blood Pressure indicate that a 20/10 mmHg increase in blood pressure above optimal doubles the risk for cardiovascular disease (Chobanian, et al, 2003).

- Optimal blood pressure, whether natural or medication-induced has been associated with a 35 percent reduction in the risk for stroke, a 20 percent reduction in the risk for myocardial infarction, and a 50 percent reduction in the risk for heart failure.
- A 12 mmHg decrease over a period of 10 years prevents 1 death for every 11 patients treated for hypertension.
- From a patient perspective a small reduction of 6 mmHg could result in a change in classification from Stage 1 hypertension to high normal.

- Similarly, small reductions in cholesterol can have a significant impact on the morbidity and mortality of the population. Elevated serum cholesterol, particularly low-density lipoprotein level has been identified as a significant risk factor for heart disease (Pasternak, 2002). Relatively small reductions in LDL and total cholesterol levels may drastically reduce risk of heart disease even in the presence of other risk factors such as diabetes and smoking (NCEP, 2001).

Good Health Program Goals

- 1. Reduce prevalence of chronic diseases
- 2. Promote healthy lifestyles to enhance well-being
- 3. Reduce risk for occupational injury
- 4. Contain medical costs associated with illness and injury

Goal 1: Reduce prevalence of chronic diseases

- To screen all employees a minimum of every other year to identify risks to good health.
- To provide targeted interventions and case management for employees with BMI > 30 or at high risk based on waist circumference (Males: > 40 inches; Females: > 35 inches).
- To provide targeted interventions and case management for employees with uncontrolled hypertension and/or elevations in glucose and cholesterol.

Goal 2: Promote healthy lifestyles to enhance well-being

- **To provide a health awareness program using print and electronic media to**
 - **1) increase employees' knowledge of health risks,**
 - **2) provide risk-reduction strategies and**
 - **3) educate employees about available health resources.**

Goal 2: Promote healthy lifestyles to enhance well-being

- **To provide an easily accessible employee fitness center with qualified trainers, state of the art aerobic and weight training equipment, individual training and group exercise, yoga, and aerobic classes.**
- **To offer nutrition counseling on an individual and group basis to assist employees in efforts to improve their health habits.**

Determinants of Employee Participation in Physical Activity

- Escalating health care costs
- Trends in obesity, diabetes, hypertension

Obesity (BMI over 30)

Overweight (BMI 25-29)

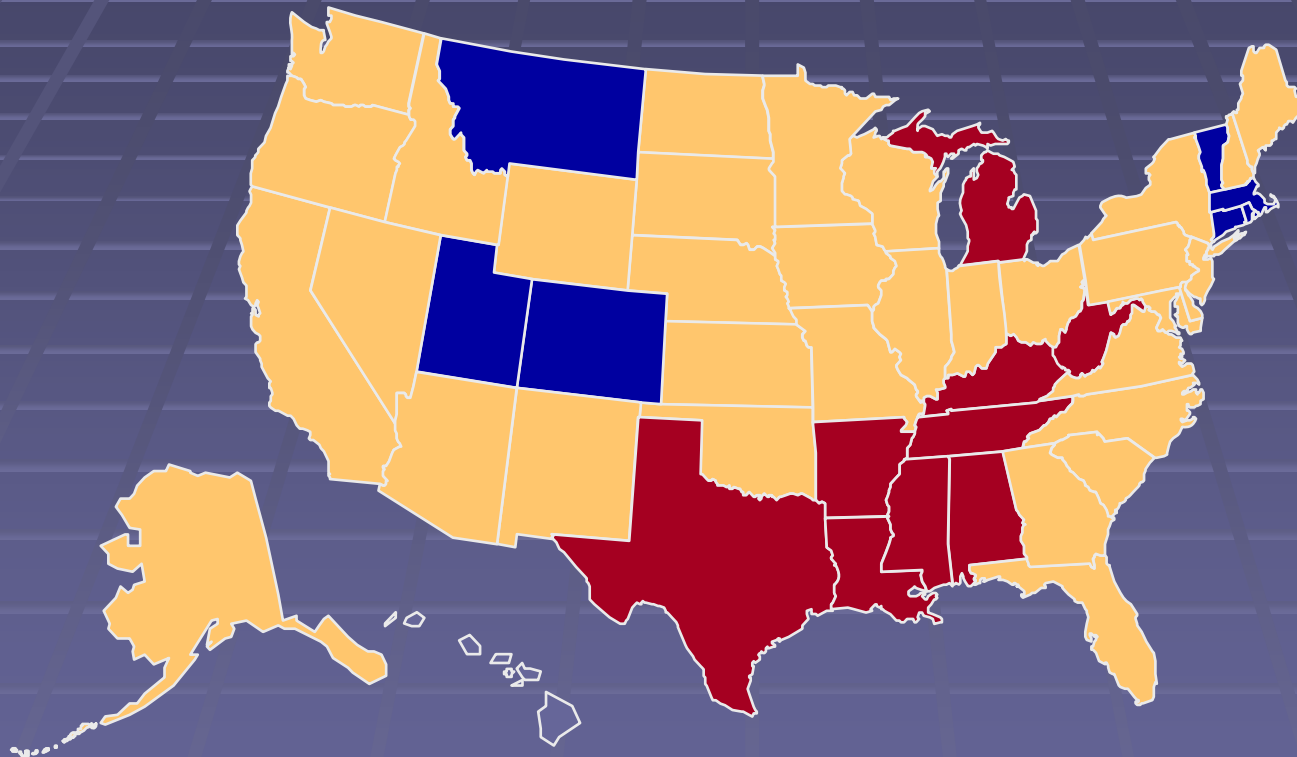
Waist size over 35 for women, 40 for men

- Type 2 diabetes
- Coronary heart disease
- High blood triglycerides, high cholesterol
- High blood pressure and stroke
- Osteoarthritis--back, hip, knee & ankle joints
- Foot pain
- Sleep apnea

Obesity Trends* Among U.S. Adults

2004

(*BMI ≥ 30 , or ~ 30 lbs overweight for 5' 4" person)



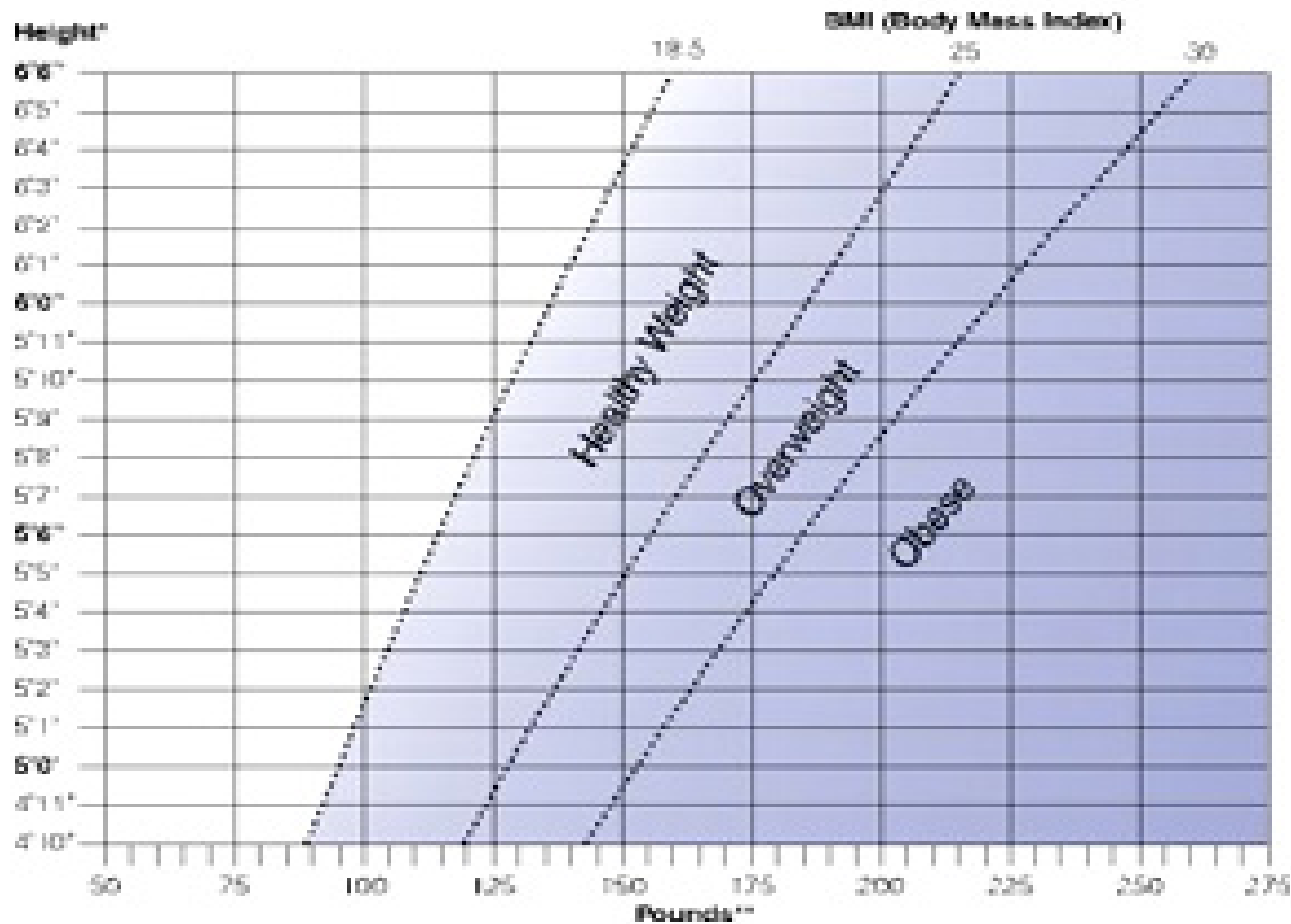
BMI and Waist Circumference Measures

Body Mass Index (BMI)

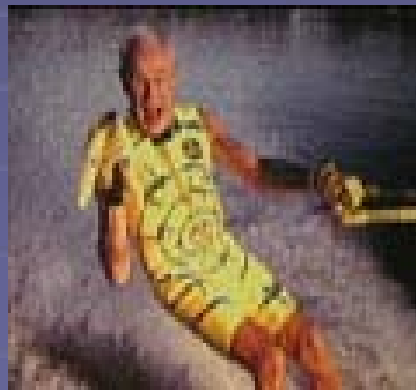
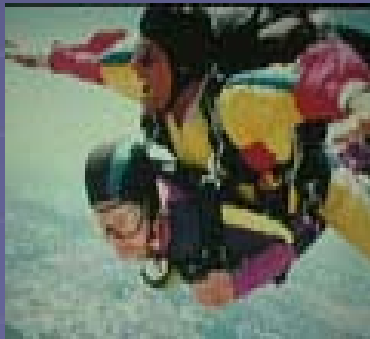
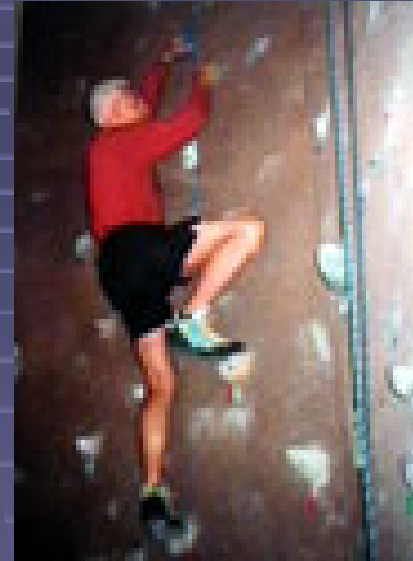
- BMI, a reliable indicator of total body fat, is related to the risk of disease and death. Although the score is valid for both men and women it is limited in that:
 - It may overestimate body fat in athletes and others who have a muscular build.
 - It may underestimate body fat in older persons and others who have lost muscle mass.

Waist Circumference

- Measures abdominal fat which is a strong predictor of risk for developing heart disease and other diseases.
- This risk increases with a waist measurement of over 40 inches in men and over 35 inches in women

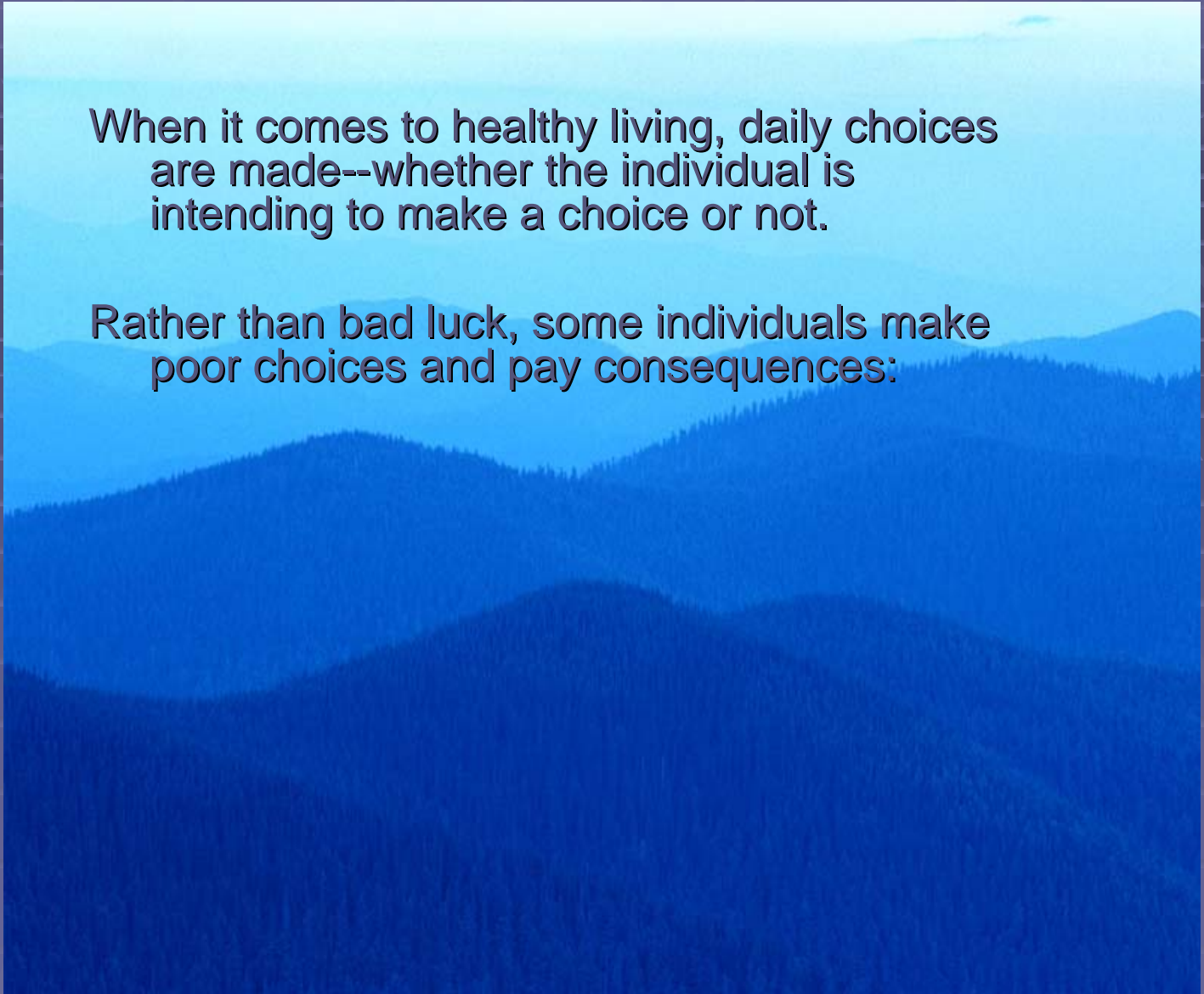


All over age 80



When it comes to healthy living, daily choices are made--whether the individual is intending to make a choice or not.

Rather than bad luck, some individuals make poor choices and pay consequences:





Healthy Choices

- Activity level and food intake influence:
 - Weight
 - Cholesterol and triglycerides
 - Blood glucose
 - Blood pressure
- These factors influence longevity and health status, because they are all risk factors for heart disease, diabetes & cancer

Determinants of Employee Participation in Physical Activity

- Review of 11 published articles on employee participation in physical activity
- Purpose – to understand factors that influence employee participation in physical activity
- American Association of Occupational Health Nurses' Journal, June 2006, 54, 249-261.

Physical Activity Measures

- Godin and Shephard Leisure Time Exercise questionnaire
- Health Promoting Lifestyle Profile
- Work, leisure and sports activity
- Nurses' Health Study Activity Questionnaire
- Investigator-developed instruments

Physical Activity Measures

- 8 studies used standardized instruments with adequate psychometric properties
- 3 studies used investigator instruments with no reliability and validity
- The most frequently used instrument was only used in three studies (Godin and Shephard's Leisure Time Exercise Questionnaire)

Theoretical Frameworks

- Eight studies utilized theoretical frameworks:
 - Pender's Health Promotion Model (3 studies)
 - Theory of Planned Behavior (2 studies)
 - Trans-theoretical Model of Change (1 study)
 - Health Belief Model (1 study)
 - Social Cognitive Theory (1 study)

Demographics

- Only 7 out of the 11 studies examined demographics
- Physical activity usually declined with age (5 out of 6 studies)
- Women were more sedentary than men

Cognitive Factors

- Perceived self-efficacy (6 studies)
- Perceived benefits (2 studies)
- Perceived health status (2 studies)

Cognitive Factors

- Attitude and intention (2 studies)
- Perceived health control (4 studies)

Research to Practice

- Offer intervention programs designed to enhance perception of physical self-efficacy or the belief that exercise programs can be accomplished
 - Employee testimonials and awards
 - Beginner classes and variety in sports, dancing, aerobics etc.

Research to Practice

- Intervention programs should be directed towards helping employees understand the benefits of physical activity
 - Active + Program
 - Active + Program for employees with diabetes
 - Climb stairs/pass up the elevator

Research to Practice

- Offer classes on self-care and health promotion that promote the belief that employees have personal control of their health
 - Noon Talks
 - Eat Smart

Future Research

- Determinants of physical activity in different work settings and diverse cultural groups.
- Measurement of activity in a multivariate way (occupational, lifestyle, leisure-time, sports)
- More research on major variables including self-efficacy and benefits.

Review

- Lifestyle factors are choices that are made on a day to day basis.
 - How are you helping employees believe they are in control and believe that they can accomplish a healthy lifestyle?
- Activity, diet and smoking are 3 of the major lifestyle factors that individuals have complete control over.
 - How are you publicizing the successes?

Thank you!